

Application No.: 10/626285

Case No.: 54046US013

Amendments to the Claims:

The following Listing of Claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 32 (currently amended) A method of forming microstructures on a substrate, comprising:

[[P]]providing a substrate comprising a plurality of electrodes patterned on at least one surface of the substrate;

placing a slurry comprising a mixture of a ceramic powder containing TiO₂ and a curable fugitive binder between the at least one surface of the substrate and a patterned surface of a mold, wherein the patterned surface of the mold comprises a plurality of microstructures, and further wherein the plurality of microstructures are aligned with the plurality of electrodes patterned on the at least one surface of the substrate;

curing the curable binder with blue light to harden the slurry and to adhere the slurry to the substrate; and

removing the mold to leave green state microstructures of the slurry adhered to the substrate, wherein the green state microstructures substantially replicate the plurality of microstructures of the patterned surface of the mold.

Claim 33 (previously presented) The method of claim 32, wherein the method further comprises debinding the green state microstructures to substantially burn out the fugitive binder, and thereafter firing the green state microstructures at an elevated temperature higher than that used for debinding to sinter the ceramic powder to form ceramic microstructures.

Claim 34 (previously presented) The method of claim 33, wherein the slurry further comprises a diluent selected to promote release properties with the mold during the removal step and to facilitate burn out of the binder during the debinding step.

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Claim 35 (previously presented) The method of claim 33, wherein the positions of the ceramic microstructures on the substrate after the firing step substantially match the positions of the green state microstructures on the substrate before firing.

Claim 36 (previously presented) The method of claim 32, wherein curing the curable binder comprises exposing the slurry to ultraviolet or visible light radiation through the substrate, through the mold, or through both the substrate and the mold.

Claim 37 (previously presented) The method of claim 32, wherein the mold comprises a thermoplastic material having a smooth surface and an opposing microstructured surface.

Claim 38 (previously presented) The method of claim 32, wherein the mold comprises a base film layer and a patterned layer made from a curable polymer, wherein the patterned layer comprises a smooth surface adhered to the base film layer and a microstructured surface opposing the base film layer.

Claim 39 (previously presented) The method of claim 32, wherein the slurry further comprises a silane compound selected to promote adhesion with the substrate during curing.

Claim 40 (previously presented) The method of claim 32, wherein the plurality of electrodes patterned on the at least one surface of the substrate comprises a series of substantially parallel and independently addressable electrodes spaced a distance apart.

Claim 41 (previously presented) A method of forming microstructures on a substrate, comprising:

providing a substrate comprising a pattern;

providing a mold comprising a microstructured surface, wherein the substrate and the mold further comprise mutual interlocking features such that when the mold is placed over the substrate with the respective mutually interlocking features mated, the microstructured surface of the mold is desirably aligned with the pattern of the substrate;

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placing a curable material between the substrate and the mold;
mating the interlocking features of the substrate and the mold; and
curing the curable material.